STRUCTURAL REPAIRS
CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

Owner: State of Missouri
Michael L. Parson, Governor

Project Management: Office of Administration
Division of Facilities Management, Design and Construction

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

Designer: Structural: Structural Engineering Associates
Certificate of Authority: #000396
SEA Project No. 2018109

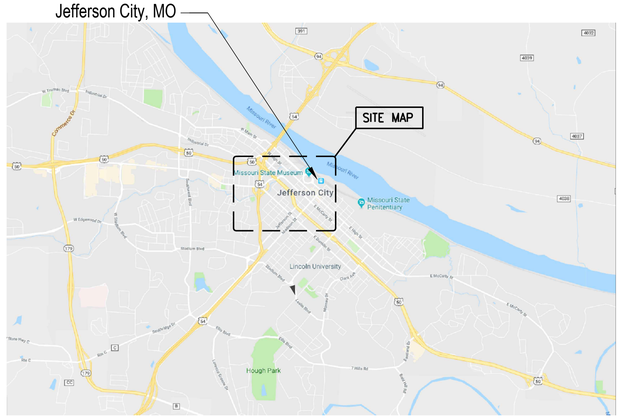
Drawing Index

Structural

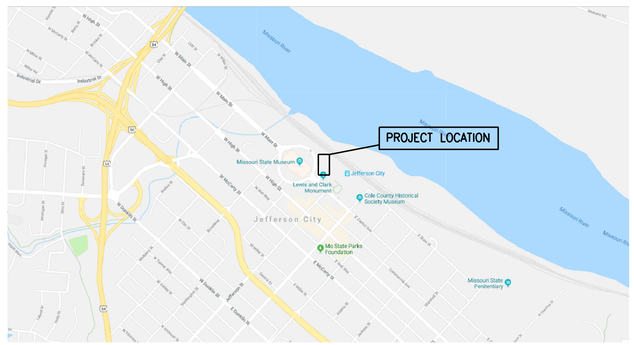
Project Number: O1817-01
Site Number: 1001
Facility Number: 3101001043

For Construction: May 15, 2020

Site Address:
Senate Drive
Jefferson City, MO



Location Map NORTH



Site Map NORTH

Aerial View NORTH

SHEET NUMBER:
S-001
SHEET 01 OF 12
May 15, 2020

GENERAL NOTES

A. GENERAL

1. These notes shall be read in conjunction with the Specifications and the Drawings. In the event of a conflict, notify the Engineer for clarification.
2. Before executing anything shown herein, examine actual job conditions. Report any discrepancy, dimensional or otherwise, between the Structural Drawings and any other error, omission, or difficulty affecting the work to the Engineer for review.
3. Any condition encountered in the existing structural system which is different from that indicated in Drawings or which might create a failure or hazard shall be brought to the immediate attention of the Engineer.
4. The existing conditions indicated on the Drawings are based on surveys made by the consultant(s) as well as on material provided by the Owner and no claim is made as to its absolute completeness and/or accuracy. Prior to the start of construction operations, field-verify existing conditions and dimensions pertaining to this Contract. Notify the Engineer immediately of any discrepancies found at the site in relation to the information provided on the Drawings.
5. The Owner or his Representative reserves the right to inspect any material, fabrication, or workmanship at any time in field or shop for conformance to the Specifications and Drawings.
6. All details and sections are intended to be typical and shall be construed to apply to any similar situation elsewhere, except where a different detail is shown.
7. Do not scale drawings.

B. DESIGN

1. Codes, specifications and standards (latest editions, U.N.O.)
   a. All design and construction shall conform to the International Building Code (2015).
   b. All construction shall comply with the provisions of the following codes, specifications and standards, as referenced in the general building code, except where noted to the contrary on drawings and specifications or where more stringent requirements are specified or shown:
      ACI 117 "Standard Specifications for Tolerance for Concrete Construction and Materials"
      ACI 301 "Specifications for Structural Concrete for Buildings"
      ACI 318 "Building Code Requirements for Reinforced Concrete"
      ASCE 7 "Minimum Design Loads and Associated Criteria for Buildings and Other Structures"

C. CONCRETE

1. All concrete shall have a minimum 28-day ultimate compressive strength of 5000 psi.
2. Portland Cement: ASTM C 150, Type 1.
3. Water-reducing admixtures: ASTM C 494.
4. Normal Weight Aggregates: ASTM C 33. Maximum 3/4 in. diameter.
5. Air entrain all exterior concrete (admixture: ASTM C 260).
6. Silica fume: ASTM C 1240
7. Do not use calcium chloride admixtures under any circumstances.
8. Concrete Mixture:
   Minimum cementitious content: 611 pcy
   Maximum W/C Ratio: 0.40
   Slump limit: 3 in. ± 1 in. before adding water reducing admixture.
   Maximum 8 in. after adding water reducing admixture.
   Air content: 6.5% ± 1.5% at point of delivery.
   Silica Fume: 3.5 to 4% by weight of total cementitious material.
9. For all mix designs, submit proposed mix including proportions by weights or volumes, strength, water-cementitious materials ratio, aggregate source and grading, cement type and brand, water source if other than potable, proportions, admixtures data sheets, test results.
10. For conventional hand trowel applied or form-and-pour vertical or overhead repairs, prepackaged concrete repair products or shotcrete may be used.
11. Shotcrete shall be composed of Portland Cement, silica fume, fine aggregate and water so proportioned as to produce a concrete suitable for pneumatic application with a minimum 28-day compressive strength of 5,000 psi. Shotcrete shall be proportioned with a minimum of 1 part cement to 4 parts fine aggregate based on dry loose volume. Shotcrete to have 5 percent silica fume by weight of cement.
12. Reinforcing bars: ASTM A 615 Specifications, Grade 60, deformed. Bend bars cold.
13. Epoxy-coated reinforcing bars: ASTM A 775.
14. Epoxy-coated steel wire and welded wire fabric: ASTM A 884, Class A.
15. Welded wire fabric (WWR): ASTM A 1064.
16. All reinforcing to be epoxy coated.
17. Maintain minimum concrete coverage for reinforcing as indicated, unless noted otherwise.
    a. 3 in. clear where concrete is deposited directly against earth.
    b. 2 in. clear where concrete is exposed to earth or weather but poured against forms for bars larger than #5.
    c. 1-1/2 in. clear where concrete is exposed to earth or weather, but poured against forms for bars #5 or smaller.
    d. 3/4 in. clear for slabs and walls formed above grade not exposed to weather.
    e. 1-1/2 in. clear for beam and columns formed above grade and not exposed to weather.

D. EPOXY DOWELS/ANCHORS

1. Epoxy doweling of reinforcing into existing concrete shall be performed using products that have been tested in accordance with ACI 355.4 and/or ICC-ES AC308 for cracked concrete and seismic applications. Adhesive anchors shall be installed by a certified adhesive anchor installer where designated on the contract documents. Pre-approved products include:
   a. Hilti HIT-HY 200 with SAFESET System or manufacturer recommended hole cleaning practice per ICC ESR-3187.
   b. DeWalt PURE110+ Epoxy Adhesive Anchor System in cracked concrete per ICC ESR-3298.
   c. DeWalt AC200+ Acrylic Adhesive, fast cure in cracked concrete per ICC ESR-4027.
   d. Simpson Strong-Tie SET-3G adhesive anchoring system per ICC ESR-4057.
   e. Hilti HIT-RE500V3 epoxy adhesive anchoring system per ICC ESR-3814 for slow cure applications.
2. All dowels shall be installed in strict accordance with Manufacturer's Printed Installation Instructions (MPII) in conjunction with edge distance, spacing and embedment depth as indicated on the drawings.
3. Drill holes for dowels using a bit incapable of cutting steel. Do not cut existing concrete reinforcing steel. If, while drilling, reinforcing steel is encountered, notify the Structural Engineer for approval of new location. Clean and patch the abandoned hole with grout.
4. Adhesive anchors must be installed in concrete aged a minimum of 21 days per ACI 318-14 17.1.2
5. Adhesive anchors installed in Horizontal and vertically overhead orientation to support sustained tension load shall be done by a certified adhesive anchor installer (AAI) as certified through ACI/CRSI according to ACI 318-14 17.8.2.2. Proof of current certification shall be submitted to engineer for approval prior to commencement of installation.
6. The contractor shall arrange for an anchor manufacturer's representative to provide onsite installation training for all of their anchoring products specified. The Structural Engineer of Record must receive documented confirmation that all of the contractor's personnel who install anchors are trained prior to the commencement of installing anchors.
7. Existing reinforcing bars in the concrete structure may conflict with specific anchor locations. The contractor shall review the existing structural drawings and undertake to locate the position of the reinforcing bars at the locations of the concrete anchors, by Hilti Ferroscan, G.P.R., X-ray, chipping or other means.

E. WATERPROOFING MEMBRANE

1. Surface Preparation:
   a. Clean all surfaces to have coating being applied. Remove oils, curing compounds, laitance, and other substances that could prevent adhesion or penetration of water repellents. Power wash substrate with TSP or Citric Acid Cleaner at 1,200 to 1,500 psi.
      1. Test for moisture content, according to manufacturer's written instructions, to ensure that surface is dry enough. Ensure that slab repairs are completed and cured.
      2. Test for pH level, according to manufacturer's written instructions, to ensure chemical bond to silicate minerals.
      3. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over. Cover adjoining and nearby surfaces of aluminum, glass, and live plants/grass.
      4. Condition Limitations:
         a. Ambient temperature is above 40 deg F.
         b. Application proceeds more than 24 hours after surfaces have been wet.
         c. Contractor to protect all vehicles and property in and around area to be treated.
      5. Crack repair in substrate is incidental to membrane application. For cracks less than 1/16 inch, provide a 4 inch wide detail coat over crack. For cracks greater than 1/16 inch, rout crack to 1/2 inch by 1/2 inch and install compatible sealant and 4 inch wide detail coat.
      6. Refer to manufacturer's instructions and details for conditions encountered not shown on drawings.
2. Traffic Coating:
   a. Traffic coating shall be a traffic bearing, seamless, high solids content, cold applied elastomeric, waterproofing system with integral wearing surface for vehicular traffic.
      1. Sikadur-22 Lo-Mod Traffic System with Sikalastic-720 base. The traffic coating system shall be suitable for medium duty vehicular traffic at parking stalls and heavy duty at driving areas. Broadcast aggregate to refusal in intermediate and top coats per manufacturer's instructions. Match existing color.
         a. Parking Stalls: 23 mils wet base coat + 32 mils top coat
         b. Driving Lanes: 23 mils wet base coat + 32 mils intermediate coat + 32 mils top coat.
   b. Application:
      1. The traffic membrane manufacturer shall supply all accessory materials including aggregates, sheet flashings, joint sealants, and substrate repair materials. Provide written verification from manufacturer of all products not shown in manufacturers standard details and/or applicators manual.
      2. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful performance record of five (5) years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
      3. Before traffic coating installation begins, the manufacturer's representative shall inspect the substrates, areas, and condition, with contractor/installer present, for compliance with requirements for surface smoothness, surface moisture, and other conditions affecting performance of traffic coating.
   c. Special Warranty:
      1. Manufacturer's standard material and labor warranty in which manufacturer and applicator agree to repair or replace material that fail within Warranty Period:
         a. Five years from date of Substantial Completion.

F. CONSTRUCTION

1. Coordinate the sizes and locations of all miscellaneous metal items required for mechanical and electrical.
2. Requirements for embedded items, sleeves, block outs, duct openings, etc., in the concrete frame shall be submitted (plans and details) to the Structural Engineer for approval at least two weeks prior to the proposed date of casting concrete. No such items, other than those shown, shall be provided in the structure without the approval of the structural engineer.
3. Provide adequate shoring or bracing during construction to resist forces such as wind and unbalanced loading due to construction.
4. Protect existing building as required until all new construction is complete.
5. Verify all dimensions of or to existing construction. Any variation from that shown on plans shall be brought to the attention of the Architect/Engineer before proceeding.
5. Haul off and properly dispose of all material demolished from the site unless specifically directed otherwise by the Owner.
6. Field verify the location and depth (or height) of all utilities prior to beginning construction in order to provide adequate clearances and to ensure noninterruption of service.
7. Before core drilling any holes, locate the reinforcing steel in the existing concrete with R-meter. Relocate the hole to avoid cutting any rebars. Do not drill holes through existing rebars unless acceptable to the Structural Engineer. Do not overcut any holes.
8. Cut openings in existing concrete slabs and walls with a power saw to prevent vibration and damage of surrounding structure.
9. Core drill corners of openings in existing concrete slabs and walls prior to saw cutting. Size of core shall be sufficient to prevent saw overrun.
10. During welding or any other construction activity that generates sparks or intense heat, the Contractor shall provide adequate fire protection to the existing structure and contents. At a minimum provide the following:
    a. Remove combustible materials from areas of welding and sparks.
    b. Provide fire proof blankets and shields to contain sparks where combustible materials cannot be removed.
    c. Provide a fire safety observer with a fire extinguisher on both the roof and below the roof during welding near the roof structure.
11. Dust control measures will be necessary during work inside existing building. Install plastic barrier to isolate construction activities from the remainder of building. Air will need to be exhausted and filtered through building openings.
    a. Coordinate all activities through existing building with owner's representative prior to occurrence.
12. Light fixture, conduit, and plumbing pipe removal and reinstallation is incidental to repairs.

G. SPECIAL INSPECTION

1. The following tests and inspection shall be performed by an independent inspection agency employed by the owner and approved by the structural engineer and the building official. Test and inspection reports shall be submitted to the owner, architect, structural engineer, and building official. Special inspection shall conform to Chapter 17 of the 2015 International Building Code, as well as conforming to the items listed below.

Special Inspection requirements:	Continuous	Periodic
2. Reinforced concrete – 2015 IBC Table 1705.3		
a. Verification of required mix design.		X
b. Sampling concrete, compressive strength cylinders, slump, air content.	X	
c. Inspection of concrete placement.	X	
d. Inspection of curing techniques.		X
3. Post-Installed Anchors		
a. Epoxy adhesive anchors not in continuous tension		X

STRUCTURAL REPAIRS SCHEDULE

REPAIR MARK	REPAIRS SCHEDULE: REPAIR TYPE	REPAIR DETAILS	APPROX. QUANTITY
R1	**FULL DEPTH CONCRETE SLAB REPAIR** a. Locations of repairs shown on drawings are general in nature. Additional locations of repair may exist. Contractor to determine exact location, shape and size of repair. b. Contractor shall chain drag all elevated slabs and mark limits of delaminations/debonding. c. Verify limits of concrete removal with Engineer prior to completion of patching. d. Remove all unsound and sound concrete as required to provide clearance. around exposed reinforcing. Remove all delaminated concrete from site. e. Refer to General Notes, Concrete Repair Notes, Specifications, and Details.	1/S-201 5/S-201 6/S-201 7/S-201	525 SF
R2	**PARTIAL DEPTH VERTICAL REPAIR** a. Locations of repairs shown on drawings are general in nature. Additional locations of repair may exist. Contractor to determine exact location, shape and size of repair. b. Contractor shall sound all vertical surfaces and mark limits of delaminations/debonding. c. Verify limits of concrete removal with Engineer prior to completion of patching. d. Remove all unsound and sound concrete as required to provide clearance. around exposed reinforcing. Remove all delaminated concrete from site. e. Refer to General Notes, Concrete Repair Notes, Specifications, and Details.	2/S-201	55 SF
R3	**PARTIAL DEPTH OVERHEAD CONCRETE BEAM REPAIR** a. Locations of repairs shown on drawings are general in nature. Additional locations of repair may exist. Contractor to determine exact location, shape and size of repair. b. Contractor shall sound all overhead surfaces and mark limits of delaminations/debonding. c. Verify limits of concrete removal with Engineer prior to completion of patching. d. Remove all unsound and sound concrete as required to provide clearance. around exposed reinforcing. Remove all delaminated concrete from site. e. Refer to General Notes, Concrete Repair Notes, Specifications, and Details.	3/S-201	375 SF
R4	**EPOXY CRACK INJECTION REPAIRS** a. Install manufacturer's recommended ports at specified locations. b. Apply epoxy cap seal between ports. c. Inject epoxy into concrete using recommended pumps from manufacturer. d. Remove cap seal after epoxy has hardened.	4/S-201	110 LF
R5	**TOP STEEL CORROSION FULL DEPTH SLAB REPAIR** a. Locations of repairs shown on drawings are general in nature. Additional locations of repair may exist. Contractor to determine exact location, shape and size of repair. b. Contractor shall sound all overhead surfaces and mark limits of delaminations/debonding. c. Verify limits of concrete removal with Engineer prior to completion of patching. d. Remove all unsound and sound concrete as required to provide clearance. around exposed reinforcing. Remove all delaminated concrete from site. e. Refer to General Notes, Concrete Repair Notes, Specifications, and Details.	1/S-201 5/S-201 6/S-201 7/S-201	425 SF
R6	**TRAFFIC MEMBRANE (VEHICULAR) PATCHING** a. Base bid quantity includes membrane reinstallation at locations of slab repair. b. Contractor to locate areas of deteriorated and debonded membrane. c. Remove all deteriorated and debonded existing traffic waterproofing membrane. d. Clean adjacent waterproofing at each repair for a minimum 6 inch wide perimeter. e. Areas shall receive full system.	5/S-202 6/S-202	1680 SF
R7	**REPAIRS OVER PEDESTRIAN TUNNEL** a. Excavate existing roadway and sidewalk as required to access and perform repair work on tunnel, or more if required for access and safety. Remove sidewalk over expansion joint. b. Excavate down side of existing tunnel at vertical expansion joint. c. Clean and prepare existing pedestrian tunnel roof, wall, and expansion joints in accordance with Manufacturer's Printed Installation Instructions. d. Apply sheet applied waterproofing to top and side of tunnel for five feet. Overlap existing waterproofing system minimum of 12 inches. Verify compatibility of sheet applied waterproofing with existing waterproofing system. e. Replace paving for roadway and sidewalk. Replace expansion joints.	S-203	1 LS
R8	**HYDROPHILIC INJECTIONS IN PEDESTRIAN TUNNEL** a. Clean and prepare substrate to expose crack at surface. b. Seal surface of crack and drill holes for injection. Clean holes as required. c. Mix product and inject according to Manufacturer's Printed Installation Instructions. d. Remove ports and excess material from substrate. Perform miscellaneous painting around cracks and areas of water staining.	4/S-201	40 LF
R9	**PAINTING/RESTRIPING PARKING STALLS** a. Restipe all traffic markings, including stall numbers, for the whole garage.	S-110 S-111	1 LS
R10	**PARTIAL DEPTH SLAB REPAIR OVER BEAM** a. Locations of repairs shown on drawings are general in nature. Additional locations of repair may exist. Contractor to determine exact location, shape and size of repair. b. Contractor shall chain drag all elevated slabs and mark limits of delaminations/debonding. c. Verify limits of concrete removal with Engineer prior to completion of patching. d. Remove all unsound and sound concrete as required to provide clearance. around exposed reinforcing. Remove all delaminated concrete from site. e. Refer to General Notes, Concrete Repair Notes, Specifications, and Details.	9/S201	325 SF

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

P.D. STEED NUMBER PE-2016001300 PROFESSIONAL ENGINEER
5/15/2020
CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

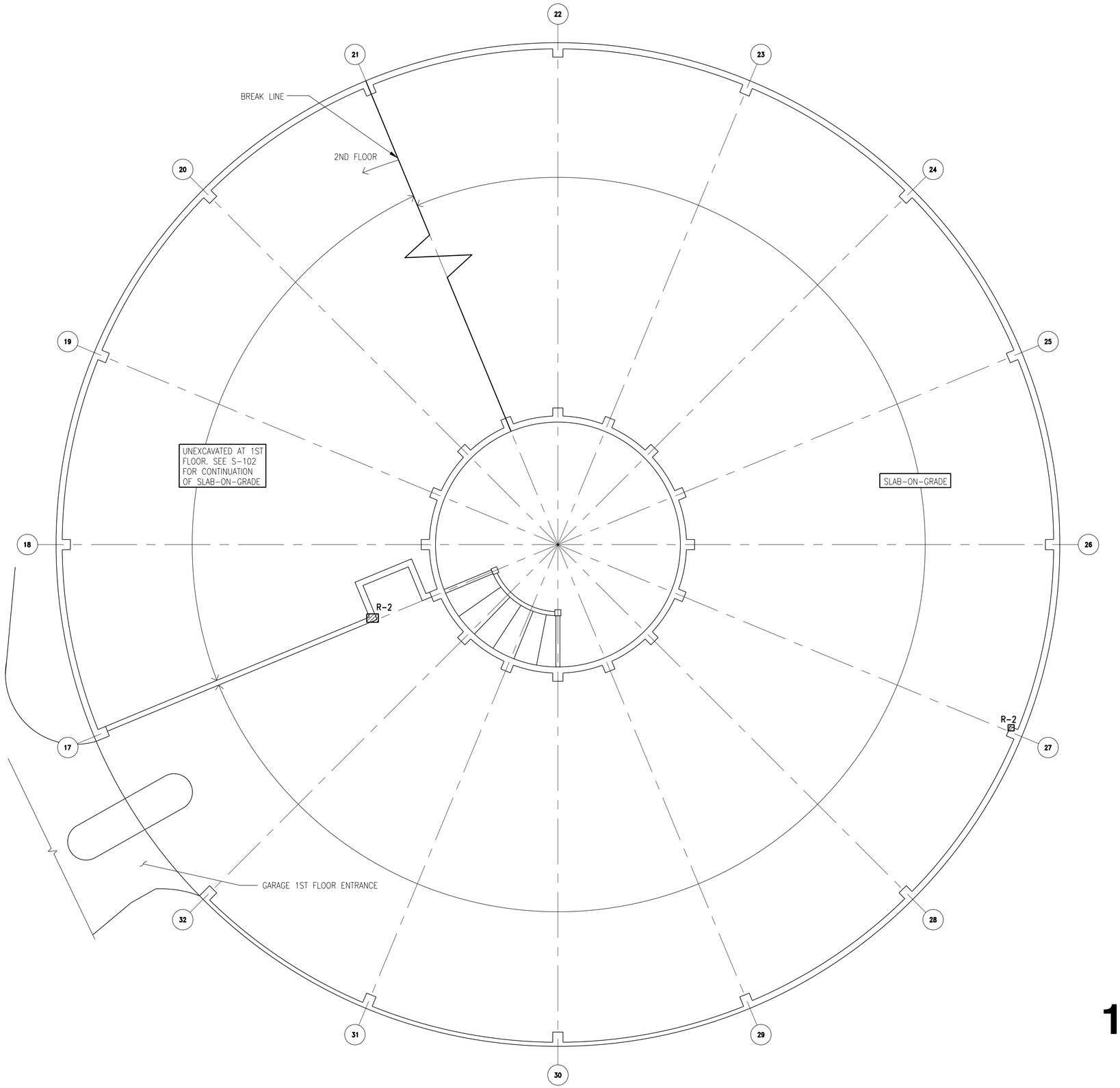
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-GEN-01
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
GENERAL NOTES AND REPAIR SCHEDULE

SHEET NUMBER:
S-100
SHEET 2 OF 12
May 15, 2020



REPAIRS LEGEND	
MARK	REPAIR TYPE
R1	FULL DEPTH CONCRETE SLAB REPAIR
R2	PARTIAL DEPTH VERTICAL REPAIR
R3	PARTIAL DEPTH OVERHEAD CONCRETE BEAM REPAIR
R4	EPOXY CRACK INJECTION REPAIRS
R5	TOP STEEL CORROSION FULL DEPTH SLAB REPAIR
R6	TRAFFIC MEMBRANE (VEHICULAR) PATCHING
R7	REPAIRS OVER PEDESTRIAN TUNNEL
R8	HYDROPHILIC INJECTIONS IN PEDESTRIAN TUNNEL
R9	PAINTING/RESTRIPING PARKING STALLS
R10	PARTIAL DEPTH SLAB REPAIR OVER BEAM

1 1ST FLOOR PLAN
1/8"=1'-0"

N

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P. D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES
INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

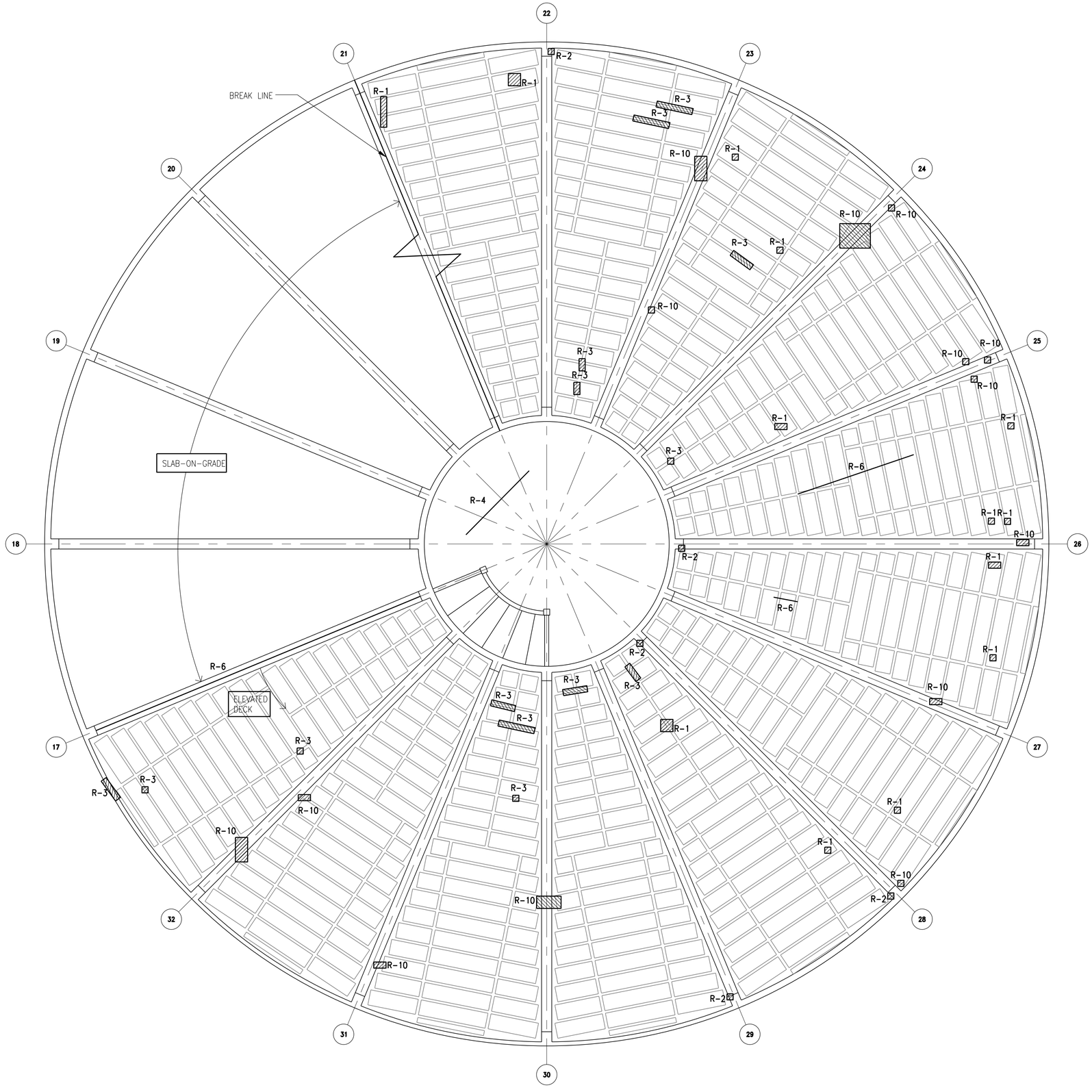
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-PLN-01
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
1ST FLOOR REPAIR PLAN

SHEET NUMBER:
S-101
SHEET 3 OF 12
May 15, 2020



REPAIRS LEGEND	
MARK	REPAIR TYPE
R1	FULL DEPTH CONCRETE SLAB REPAIR
R2	PARTIAL DEPTH VERTICAL REPAIR
R3	PARTIAL DEPTH OVERHEAD CONCRETE BEAM REPAIR
R4	EPOXY CRACK INJECTION REPAIRS
R5	TOP STEEL CORROSION FULL DEPTH SLAB REPAIR
R6	TRAFFIC MEMBRANE (VEHICULAR) PATCHING
R7	REPAIRS OVER PEDESTRIAN TUNNEL
R8	HYDROPHILIC INJECTIONS IN PEDESTRIAN TUNNEL
R9	PAINTING/RESTRIPING PARKING STALLS
R10	PARTIAL DEPTH SLAB REPAIR OVER BEAM

1 2ND FLOOR PLAN
1/8"=1'-0"

N

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P.D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES
INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

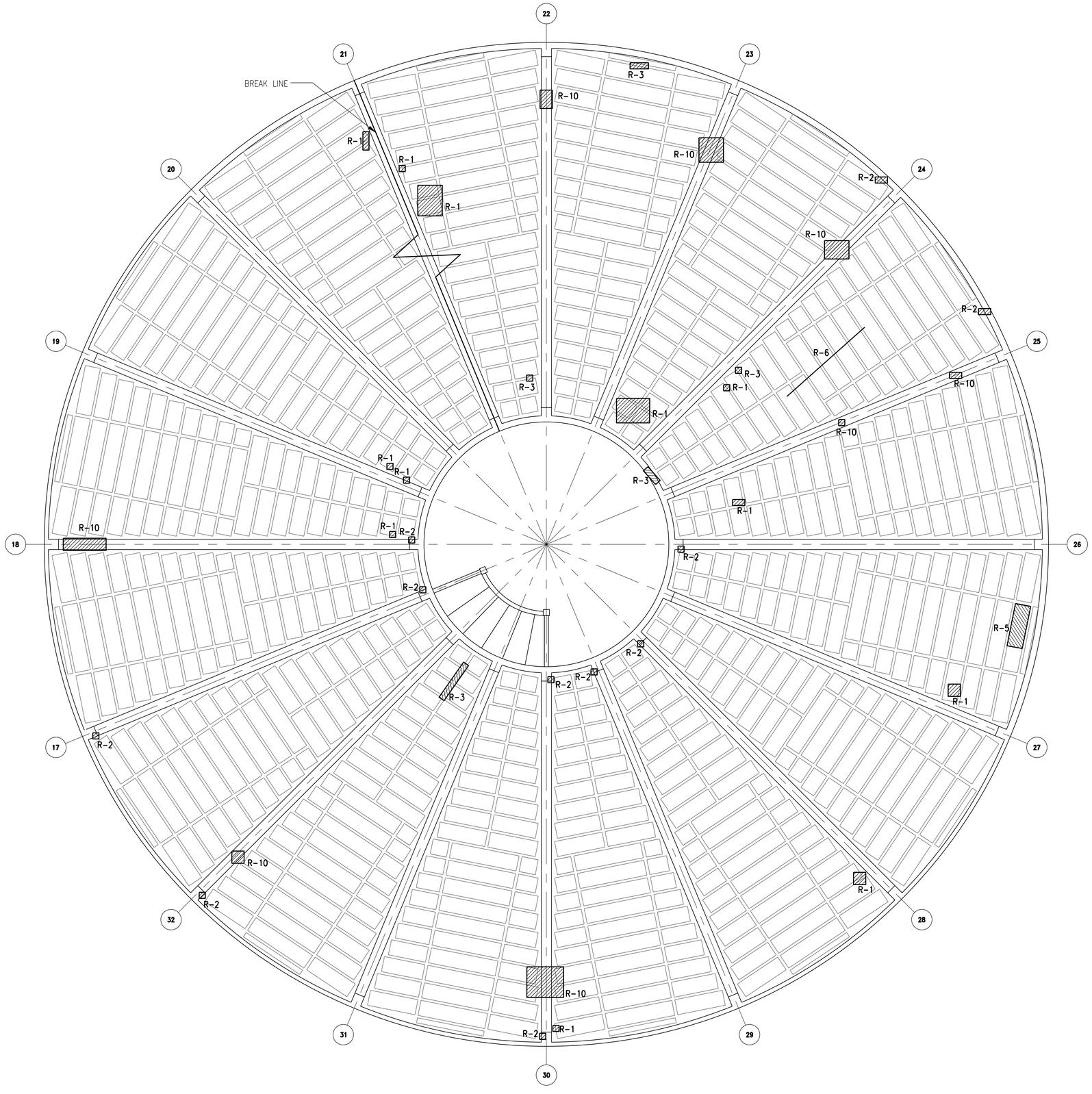
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-PLN-02
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
2ND FLOOR REPAIR PLAN

SHEET NUMBER:
S-102
SHEET 4 OF 12
May 15, 2020



REPAIRS LEGEND	
MARK	REPAIR TYPE
R1	FULL DEPTH CONCRETE SLAB REPAIR
R2	PARTIAL DEPTH VERTICAL REPAIR
R3	PARTIAL DEPTH OVERHEAD CONCRETE BEAM REPAIR
R4	EPOXY CRACK INJECTION REPAIRS
R5	TOP STEEL CORROSION FULL DEPTH SLAB REPAIR
R6	TRAFFIC MEMBRANE (VEHICULAR) PATCHING
R7	REPAIRS OVER PEDESTRIAN TUNNEL
R8	HYDROPHILIC INJECTIONS IN PEDESTRIAN TUNNEL
R9	PAINTING/RESTRIPING PARKING STALLS
R10	PARTIAL DEPTH SLAB REPAIR OVER BEAM

1 3RD FLOOR PLAN
1/8"=1'-0"

N

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P. D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES
INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

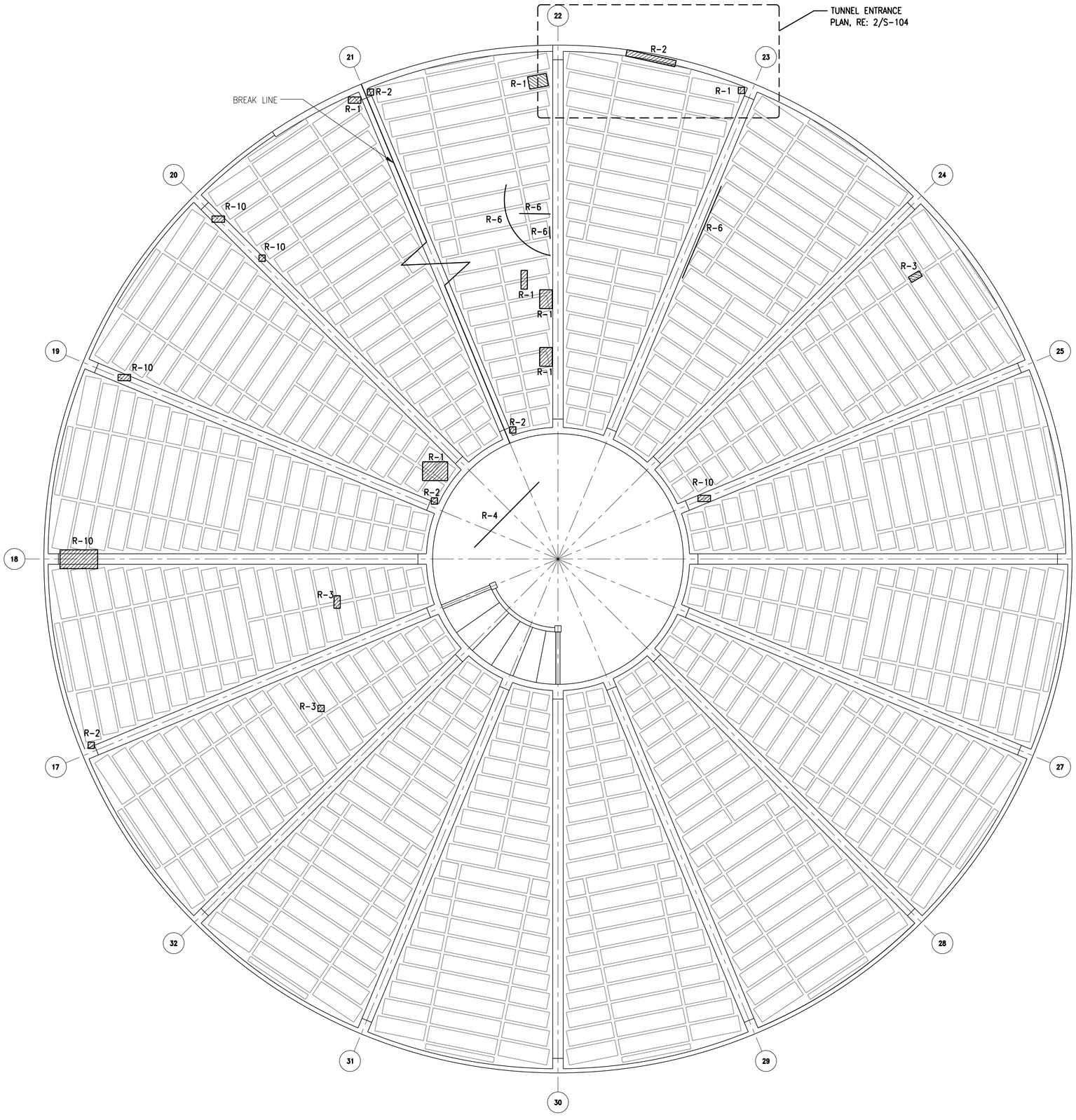
REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

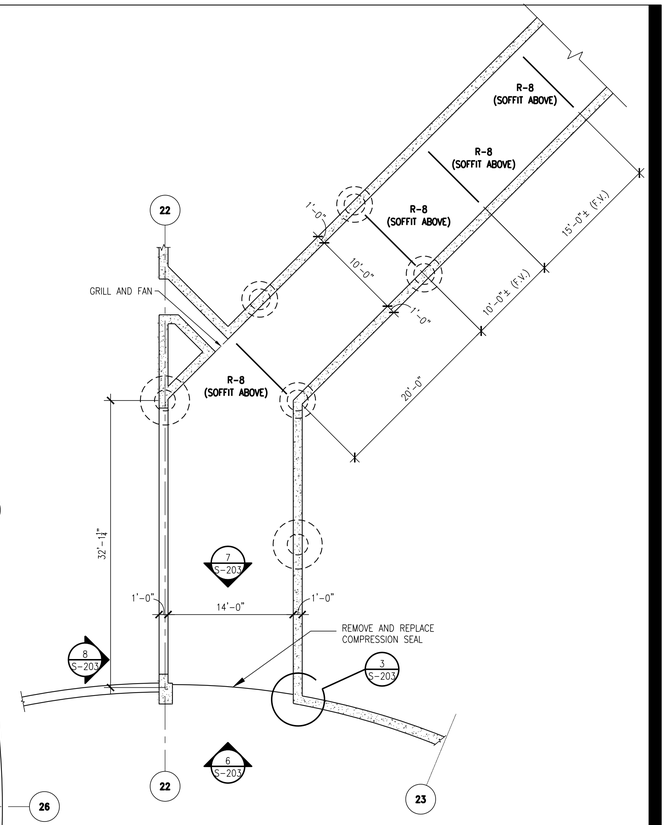
CAD DWG FILE: S-PLN-03
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
3RD FLOOR REPAIR PLAN

SHEET NUMBER:
S-103

SHEET 5 OF 12
May 15, 2020





2 TUNNEL ENTRANCE PLAN
1/8"=1'-0"

1 4TH FLOOR PLAN
1/8"=1'-0"

REPAIRS LEGEND	
MARK	REPAIR TYPE
R1	FULL DEPTH CONCRETE SLAB REPAIR
R2	PARTIAL DEPTH VERTICAL REPAIR
R3	PARTIAL DEPTH OVERHEAD CONCRETE BEAM REPAIR
R4	EPOXY CRACK INJECTION REPAIRS
R5	TOP STEEL CORROSION FULL DEPTH SLAB REPAIR
R6	TRAFFIC MEMBRANE (VEHICULAR) PATCHING
R7	REPAIRS OVER PEDESTRIAN TUNNEL
R8	HYDROPHILIC INJECTIONS IN PEDESTRIAN TUNNEL
R9	PAINTING/RESTRIPING PARKING STALLS
R10	PARTIAL DEPTH SLAB REPAIR OVER BEAM

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P.D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES
INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

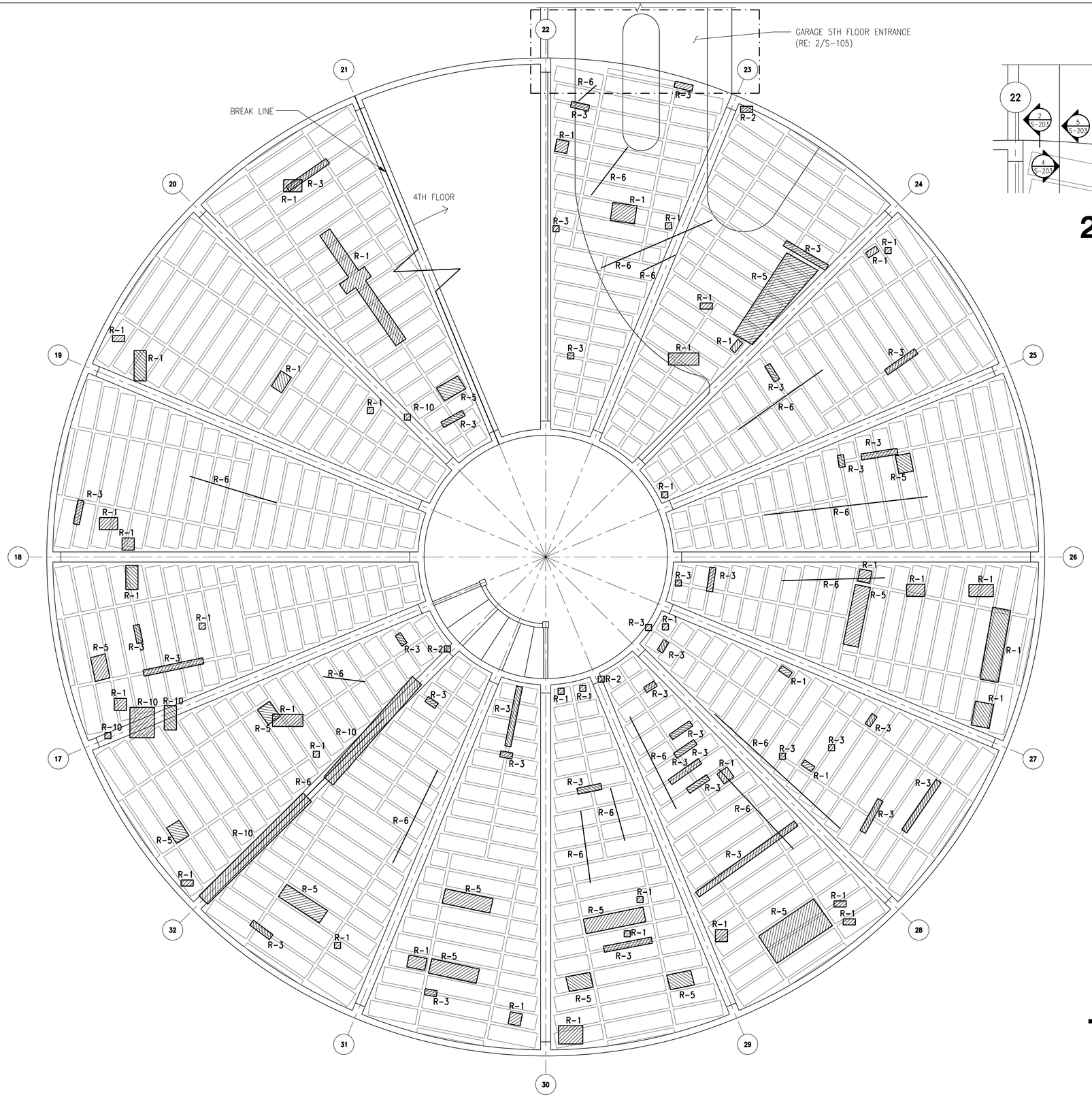
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

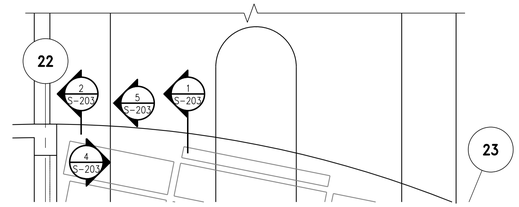
REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-PLN-04
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
4TH FLOOR REPAIR PLAN

SHEET NUMBER:
S-104
SHEET 6 OF 12
May 15, 2020





2 GARAGE 5th FLOOR ENTRANCE

REPAIRS LEGEND	
MARK	REPAIR TYPE
R1	FULL DEPTH CONCRETE SLAB REPAIR
R2	PARTIAL DEPTH VERTICAL REPAIR
R3	PARTIAL DEPTH OVERHEAD CONCRETE BEAM REPAIR
R4	EPOXY CRACK INJECTION REPAIRS
R5	TOP STEEL CORROSION FULL DEPTH SLAB REPAIR
R6	TRAFFIC MEMBRANE (VEHICULAR) PATCHING
R7	REPAIRS OVER PEDESTRIAN TUNNEL
R8	HYDROPHILIC INJECTIONS IN PEDESTRIAN TUNNEL
R9	PAINTING/RESTRIPING PARKING STALLS
R10	PARTIAL DEPTH SLAB REPAIR OVER BEAM

1 5TH FLOOR PLAN
1/8"=1'-0"

N

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P. D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES
INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

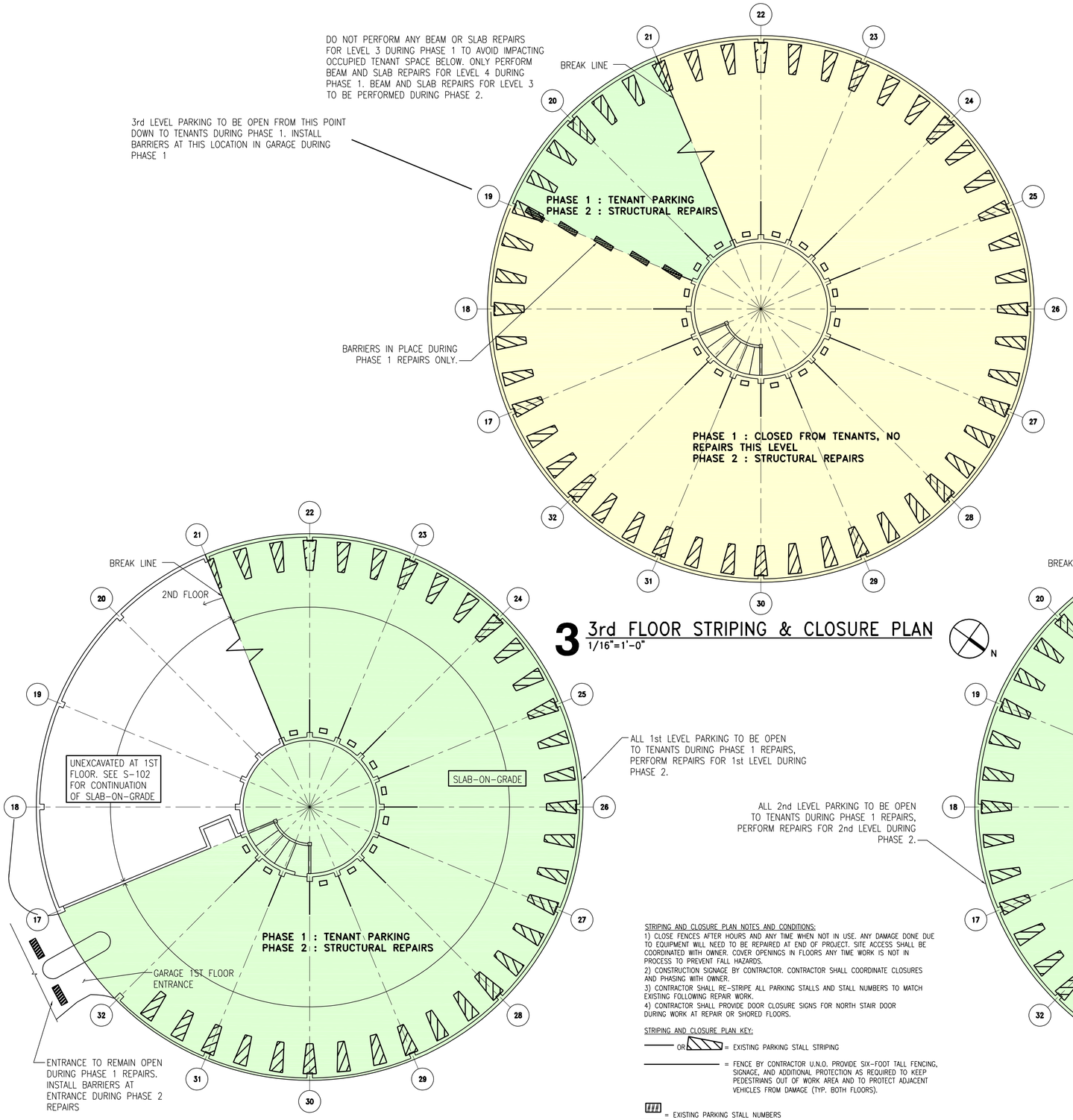
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-PLN-05
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
5TH FLOOR REPAIR PLAN

SHEET NUMBER:
S-105
SHEET 7 OF 12
May 15, 2020



3 3rd FLOOR STRIPING & CLOSURE PLAN
1/16"=1'-0"

1 1ST FLOOR STRIPING & CLOSURE PLAN
1/16"=1'-0"

2 2nd FLOOR STRIPING & CLOSURE PLAN
1/16"=1'-0"

STRIPING AND CLOSURE PLAN NOTES AND CONDITIONS:

1) CLOSE FENCES AFTER HOURS AND ANY TIME WHEN NOT IN USE. ANY DAMAGE DONE DUE TO EQUIPMENT WILL NEED TO BE REPAIRED AT END OF PROJECT. SITE ACCESS SHALL BE COORDINATED WITH OWNER. COVER OPENINGS IN FLOORS ANY TIME WORK IS NOT IN PROCESS TO PREVENT FALL HAZARDS.
2) CONSTRUCTION SIGNAGE BY CONTRACTOR. CONTRACTOR SHALL COORDINATE CLOSURES AND PHASING WITH OWNER.
3) CONTRACTOR SHALL RE-STRIPE ALL PARKING STALLS AND STALL NUMBERS TO MATCH EXISTING FOLLOWING REPAIR WORK.
4) CONTRACTOR SHALL PROVIDE DOOR CLOSURE SIGNS FOR NORTH STAIR DOOR DURING WORK AT REPAIR OR SHORED FLOORS.

STRIPING AND CLOSURE PLAN KEY:

OR = EXISTING PARKING STALL STRIPING

= FENCE BY CONTRACTOR U.N.O. PROVIDE SIX-FOOT TALL FENCING, SIGNAGE, AND ADDITIONAL PROTECTION AS REQUIRED TO KEEP PEDESTRIANS OUT OF WORK AREA AND TO PROTECT ADJACENT VEHICLES FROM DAMAGE (TYP. BOTH FLOORS).

= EXISTING PARKING STALL NUMBERS

= MUTCD TYPE III BARRICADE WITH MUTCD R11-2 48"x30" ROAD CLOSED SIGN

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P.D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

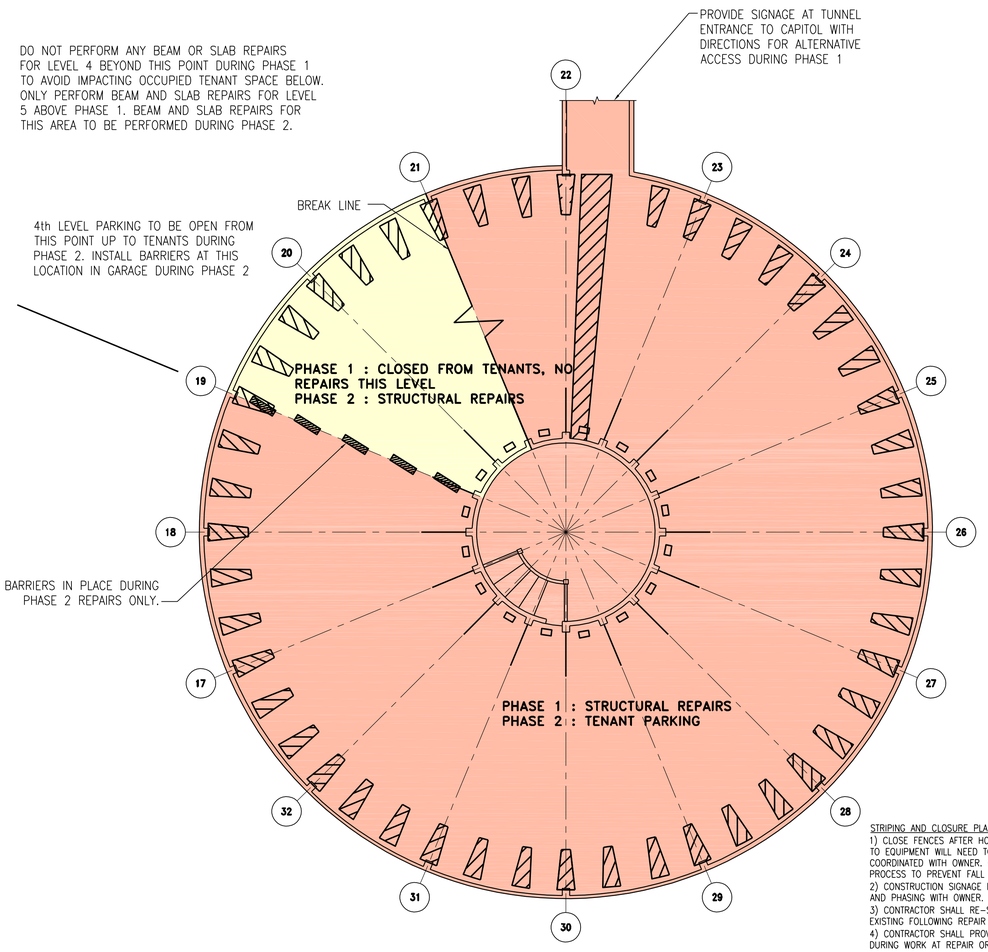
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-PLN-10
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
1ST, 2ND & 3RD FLOOR STRIPING & CLOSURE PLAN

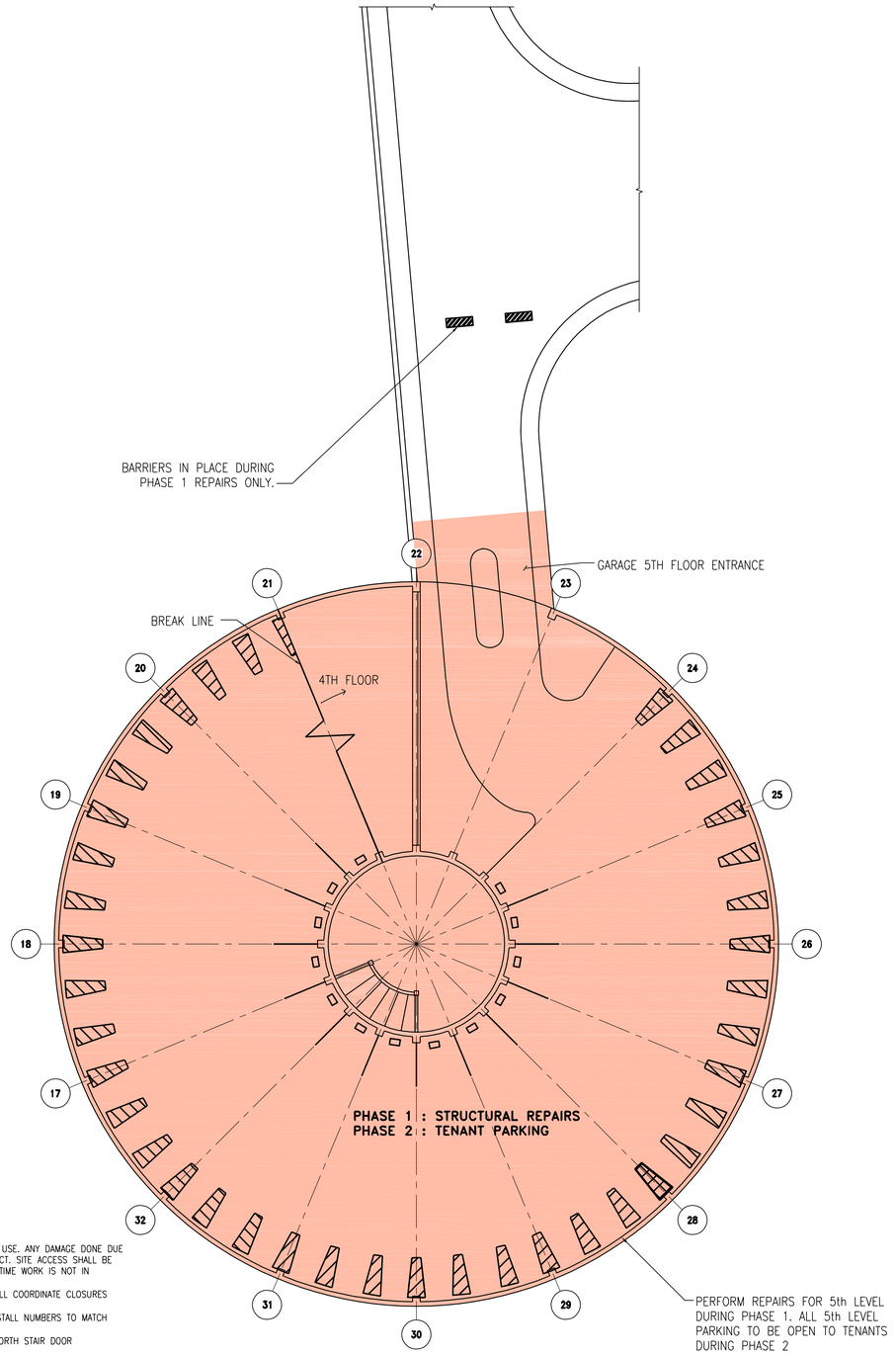
SHEET NUMBER:
S-110
SHEET 8 OF 12
May 15, 2020



1 4TH FLOOR STRIPING & CLOSURE PLAN
1/16"=1'-0"

STRIPING AND CLOSURE PLAN NOTES AND CONDITIONS:
1) CLOSE FENCES AFTER HOURS AND ANY TIME WHEN NOT IN USE. ANY DAMAGE DONE DUE TO EQUIPMENT WILL NEED TO BE REPAIRED AT END OF PROJECT. SITE ACCESS SHALL BE COORDINATED WITH OWNER. COVER OPENINGS IN FLOORS ANY TIME WORK IS NOT IN PROCESS TO PREVENT FALL HAZARDS.
2) CONSTRUCTION SIGNAGE BY CONTRACTOR. CONTRACTOR SHALL COORDINATE CLOSURES AND PHASING WITH OWNER.
3) CONTRACTOR SHALL RE-STRIPE ALL PARKING STALLS AND STALL NUMBERS TO MATCH EXISTING FOLLOWING REPAIR WORK.
4) CONTRACTOR SHALL PROVIDE DOOR CLOSURE SIGNS FOR NORTH STAIR DOOR DURING WORK AT REPAIR OR SHORED FLOORS.

STRIPING AND CLOSURE PLAN KEY:
OR = EXISTING PARKING STALL STRIPING
= FENCE BY CONTRACTOR U.N.O. PROVIDE SIX-FOOT TALL FENCING, SIGNAGE, AND ADDITIONAL PROTECTION AS REQUIRED TO KEEP PEDESTRIANS OUT OF WORK AREA AND TO PROTECT ADJACENT VEHICLES FROM DAMAGE (TYP. BOTH FLOORS).
= EXISTING PARKING STALL NUMBERS
= MUTCD TYPE III BARRICADE WITH MUTCD R11-2 48"x30" ROAD CLOSED SIGN



2 5TH FLOOR STRIPING & CLOSURE PLAN
1/16"=1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P.D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seasssociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-PLN-11
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
4TH & 5TH FLOOR STRIPING & CLOSURE PLAN

SHEET NUMBER:
S-111
SHEET 9 OF 12
May 15, 2020

CONCRETE REPAIR NOTES

IDENTIFYING REPAIR AREAS

a. Contractor shall sound concrete and mark limits of delamination/debonding in accordance with ASTM D4580. Extend repair margins 4 inches beyond limits of sounding perimeter or larger as required to expose non-corroded reinforcing steel or confirm that there is no visible evidence of delamination cracking in concrete perimeter.
b. Expand limits of concrete removal to avoid irregular patch geometry such as re-entrant corners and long, narrow patches. Provide general geometry in accordance with ICRI 310.1R.

PREPARATION

a. Remove all unsound concrete and sound concrete as required to maintain minimum depths and adequate cover around reinforcing steel.
b. Saw-cut around the perimeter of the patch area 3/4 inches deep. Determine depth of reinforcing steel prior to saw-cutting. Adjust depth as required to avoid cutting of or damage to reinforcing steel or other embedded items.
c. Where half or more of the perimeter of reinforcing bar is exposed, bond is broken around reinforcing steel, or the reinforcing steel bar is corroded, remove concrete from the entire perimeter of the bar to provide at least 3/4 inches clear.
d. Roughen concrete surface in patch area to achieve a minimum concrete surface profile in accordance with ICRI CSP-7 as described in the latest edition of ICRI 310.2.R.
e. Remove bruised concrete substrate weakened by microcroking by abrasive blasting or high-pressure water blasting with or without abrasive. When water blasting, provide 5000 psi water pressure or higher if required to satisfy the tensile bond requirements. Keep nazzle not less than 6 inches and no more than 12 inches away from the surface.
f. Remove concrete fragments, corrosion product, mill scale, and other contaminants from reinforcing bars by commercial blast cleaning in accordance with SSPC-SP6 until a bare metal finish has been achieved on the reinforcing.
g. Where section loss of reinforcing bars is more than 10% of the cross-sectional area, or if existing reinforcing is severely damaged, splice epoxy coated replacement bars to existing bars as directed by the Engineer. Remove additional concrete as necessary to provide at least 3/4 inches clearance beyond existing and replacement or supplemental bars. Splice replacement bars to existing bars according to reinforcing repair detail.
h. At areas around the repair perimeters where the development length cannot be achieved with the repair, drill in sound concrete as shown on the drawings or as directed by the Engineer to provide the required bar development and splice length, or remove additional concrete to allow for the splice.
i. Clean repair area with high pressure, oil free air.
j. Verify limits of concrete removal with Engineer prior to placing repair material.
k. Repairs will be paid on a unit price basis. Repair areas will be measured to the nearest 1 square foot.

SACRIFICIAL ANODES

a. Install sacrificial anodes in strict accordance with Manufacturer's Printed Installation Instructions. Install anodes at 24 inches on center around the perimeter of the repair area. All existing reinforcement passing between the repair material and the existing concrete shall be electrically continuous with the anodes.
b. Remove concrete as required to provide the Manufacturer's written recommended clearance around and coverage over the anodes.
c. Clean exposed reinforcing steel of corrosion, mortar, coating, etc. to provide a bright metal surface that will provide sufficient electrical connection. Place the anodes as close as practical to the edge of repair (within 6 inches).
d. Embed anodes in specified conductive mortar prior to placing repair material.
e. Repair areas less than 2 square feet shall not require installation of anodes.

BONDING

a. Saturated Surface Dry Substrate: For ready mixed concrete, pre-dampen concrete substrate surfaces to saturated surface-dry (SSD) condition prior to placement of patch material. Apply water to the surface of the patch area for a minimum of 2 hours prior to placement of repair material, or longer as required to achieve SSD. Remove excess water immediately prior to placement of patch material by high pressure, oil free air.

PLACEMENT OF PATCH MATERIAL

a. Refer to specifications or General Notes for ready mixed concrete mix design requirements, or requirements for prepackaged concrete repair materials.
b. Mixing, conveying and placement of ready mixed concrete shall conform to the requirement of ACI 301, except as modified within these general notes or specifications.
c. Place repair material within open time of any mortar scrub coat or bonding agent.
d. Mix and place pre-packaged repair material in strict accordance with Manufacturer's Printed Installation Instructions.
e. Ready mixed concrete shall be batched, mixed and delivered in accordance with the requirements of ASTM C94.
f. Fully consolidate all concrete using mechanical vibrators except in the case of self-consolidating concrete.
g. Three days after completion of repairs, sound repair areas in the presence of the design professional to verify patch is bonded and there are no additional delaminations present in or around repair area. If delaminations are present in the repair area, repair additional delaminations at no additional cost to the owner.

SHOTCRETE

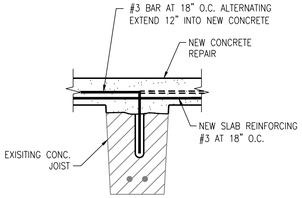
a. Contractor has the option to use shotcrete for overhead and vertical repairs.
b. Prepare repair areas as noted above. Sawcut along perimeter of repair area to create a clean, straight joint for the edges of the shotcrete repair. Do not damage existing reinforcing steel.
c. Form sides of shotcrete repair area. Do not damage existing reinforcing.
d. Shotcrete repair using approved mix design. Surface shall be saturated surface dry (SSD) immediately prior to shooting. Apply shotcrete in such a fashion to ensure specified compressive strengths and to eliminate rebound or seams in shotcrete.

CURING

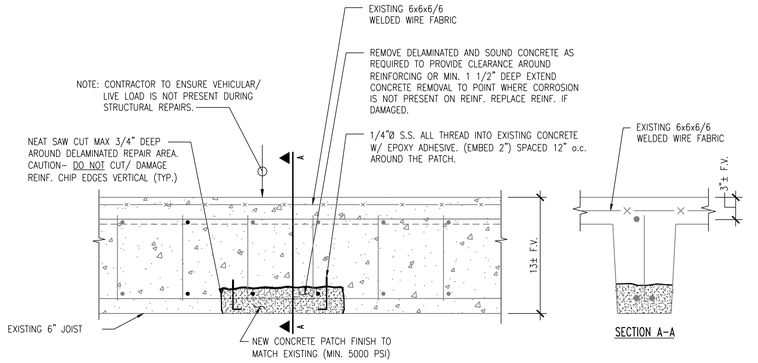
a. Wet cure all ready-mixed concrete repair locations with water or water soaked absorptive cover or moisture retaining cover curing. Cure repair locations for a minimum of 72 hours.
c. Cure pre-packaged concrete repair materials in strict accordance with Manufacturer's Printed Installation Instructions.
d. Cure shotcrete continuously by maintaining a moist condition for seven days.
e. If cracking occurs in repair areas, modify preparation, placement and curing procedures as required to eliminate cracking and perform repairs again at no additional cost to owner.

PRECAUTIONS

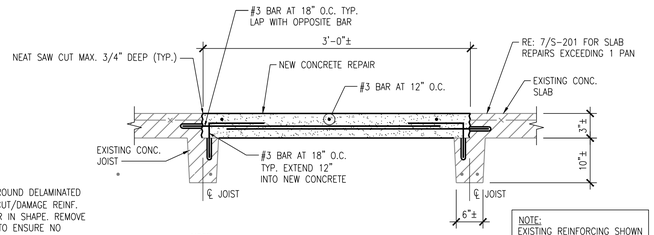
a. Provide dust partitions or plywood enclosures as required to protect surrounding pedestrians, motor vehicles, mechanical, electrical and plumbing equipment, surrounding construction, project site, landscaping and surrounding buildings from damage or injury resulting from concrete rehabilitation work.
b. Perform all work in accordance with OSHA guidelines and regulations and all other city, state and federal regulations.



7 JOIST REPAIR WHERE SLAB REPAIRS EXCEED 1 PAN
1 1/2"=1'-0"
TYPE R1 OR R5 REPAIR



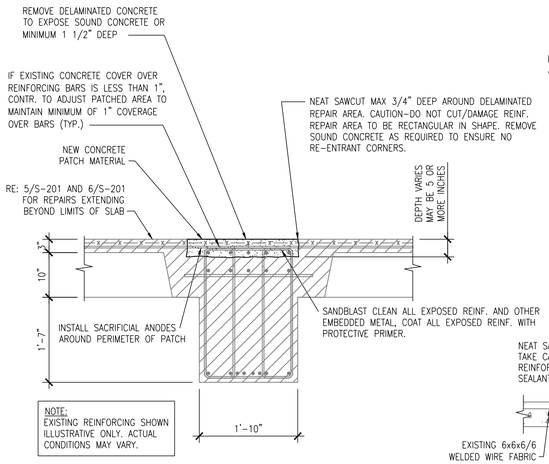
NOTE:
1.) SANDBLAST CLEAN ALL EXPOSED REINF. AND OTHER EMBEDDED METAL, COAT ALL EXPOSED REINF. WITH PROTECTIVE PRIMER.
2.) EXISTING REINFORCING SHOWN ILLUSTRATIVE ONLY. ACTUAL CONDITIONS MAY VARY.



NOTE:
ALL NEW REINFORCING TO BE EPOXY COATED, EMBEDDED MINIMUM 6" INTO EXISTING CONCRETE AND EPOXIED IN PLACE WITH ADHESIVE

NOTE:
EXISTING REINFORCING SHOWN ILLUSTRATIVE ONLY. ACTUAL CONDITIONS MAY VARY.

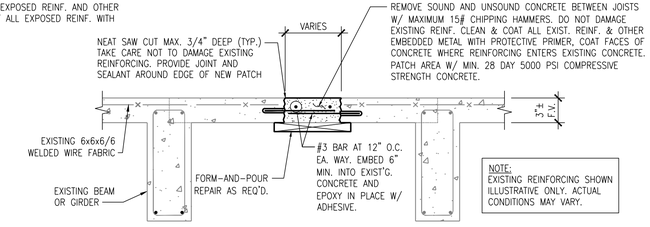
3 OVERHEAD/SOFFIT PARTIAL DEPTH JOIST OR BEAM REPAIR
1 1/2"=1'-0"
TYPE R3 REPAIR



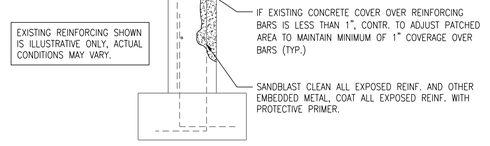
NOTE:
EXISTING REINFORCING SHOWN ILLUSTRATIVE ONLY. ACTUAL CONDITIONS MAY VARY.

9 PARTIAL DEPTH SLAB REPAIR OVER BEAM
NTS

6 LARGE FULL DEPTH SLAB REPAIR
NTS
TYPE R1 OR R5 REPAIR



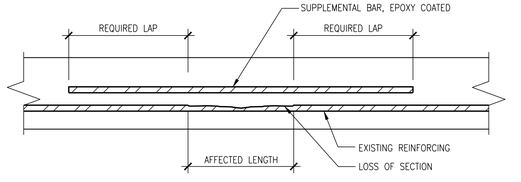
NOTE:
EXISTING REINFORCING SHOWN ILLUSTRATIVE ONLY. ACTUAL CONDITIONS MAY VARY.



EXISTING REINFORCING SHOWN IS ILLUSTRATIVE ONLY, ACTUAL CONDITIONS MAY VARY.

2 CONCRETE WALL/VERTICAL REPAIR
N.T.S.
TYPE R2 REPAIR

5 FULL DEPTH CAST IN PLACE SMALL SLAB REPAIR
NTS
TYPE R1 OR R5 REPAIR

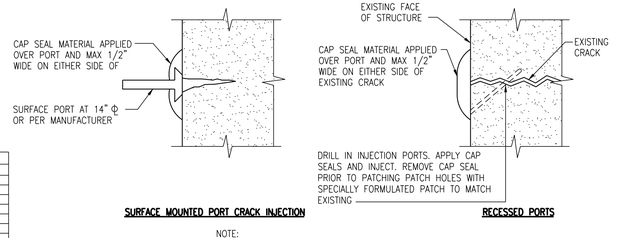


NOTE: WHERE A LOSS OF 10% OR MORE OF EXISTING REINFORCING SECTION IS IDENTIFIED, NOTIFY ENGINEER FOR ANALYSIS OF EXISTING CONDITIONS. FOR REPAIR, SPLICE EXISTING BAR WITH NEW EPOXY COATED BAR AT DETERIORATED OR DAMAGED LOCATION, TYING NEW BAR DIRECTLY TO EXISTING AND MAINTAIN EXISTING CONCRETE COVER. ADDITIONAL CONCRETE REMOVAL MAY BE NECESSARY TO PROPERLY SPLICE THE NEW REINFORCING BAR.

REQUIRED LAP, IN INCHES

BAR SIZE	3" COVER	1 1/2" COVER	2" COVER
#3	13	13	13
#4	22	17	17
#5	32	22	22
#6	43	26	26
#7	69	42	38
#8	86	54	43
#9	104	66	53
#10	125	81	66
#11	146	97	79

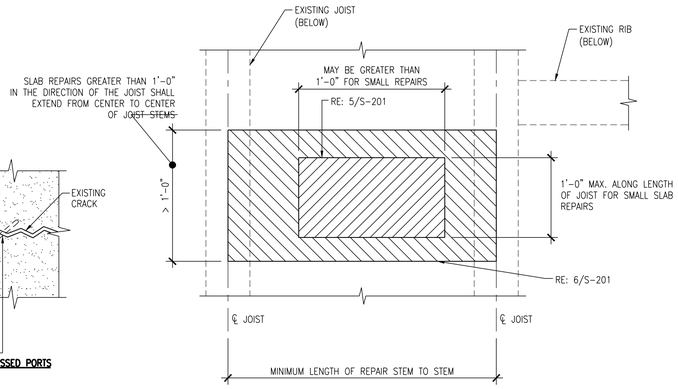
8 TYPICAL REINFORCING REPAIR DETAIL
N.T.S.



SURFACE MOUNTED PORT CRACK INJECTION
RECESSED PORTS

NOTE:
USE EPOXY FOR TYPE R4 REPAIRS, USE HYDROPHOBIC PRODUCT FOR TYPE R8 REPAIRS

4 TYPICAL CRACK INJECTION REPAIRS
N.T.S.
TYPE R4 OR R8 REPAIR



1 TYP. PLAN FOR SLAB REPAIR SIZE
3/4"=1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI P.D. STEED NUMBER PE-2010001300 PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

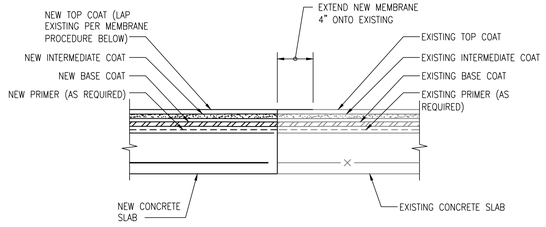
PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-DTL-01
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:
REPAIR DETAILS

SHEET NUMBER:
S-201
SHEET 10 OF 12
May 15, 2020



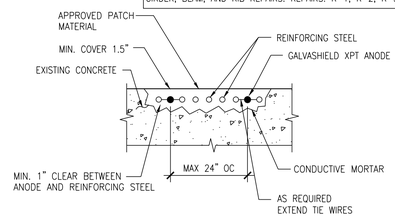
MEMBRANE REPAIR PROCEDURE:

1. POWER WASH CLEAN EXISTING WEAR COURSE.
2. XYLENE WIPE ALL PROPOSED TOP COAT AREAS AT LEAST 2" BEYOND EXTENTS.
3. AFTER XYLENE WIPE HAS FLASHED, APPLY EPOXY PRIMER.
4. INSTALL NEW TOPCOAT. FEATHER COATS AT EDGES OVER EXISTING MEMBRANE PERIMETER A MINIMUM 4".

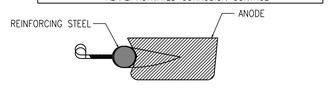
5 TYPICAL MEMBRANE PATCH DETAIL
N.T.S.

TYPE R6 REPAIR

NOTE:
INSTALL GALVANIC ANODES (RE: 030130) AT ALL SLAB, COLUMN, WALL, GIRDER, BEAM, AND RIB REPAIRS. REPAIRS: R-1, R-2, R-3, & R-5



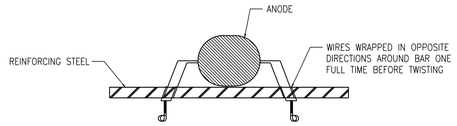
ANODE PROPERTIES	
MINIMUM WEIGHT OF ZINC CORE	60g
OVERALL LENGTH OF TIE WIRES	350mm
NOMINAL DIMENSIONS OF ANODE	125mm x 25mm x 25mm
ANODE TYPE/CLASS	1A/P
ALKALI ACTIVATED CORROSION CONTROL	



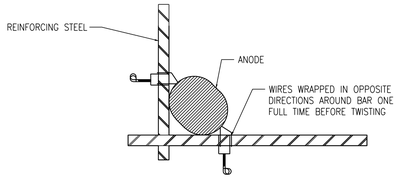
SECTION OF TYPICAL CONNECTION TO SIDE OF REBAR

ANODE (SOFFIT) NOTES:

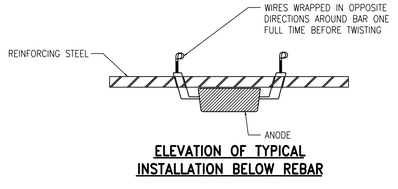
1. REMOVE DAMAGED CONCRETE AS WITH STANDARD REPAIR METHODS.
2. REPLACE/CLEAN CORRODED REINFORCING STEEL.
3. ENSURE ALL EXPOSED REINFORCING STEEL IS SECURELY FASTENED TOGETHER WITH TIE WIRE TO PROVIDE GOOD CONTINUITY.
4. ATTACH ANODES TO CLEAN REINFORCING STEEL AT SPACING OUTLINED IN CONTRACT SPECIFICATION. ATTACH EACH END OF ANODE TO ADJACENT PARALLEL REINFORCING STEEL BARS EXTEND TIE WIRES WITH REBAR WIRE AS REQUIRED. MINIMUM SPACING OF ¾" BETWEEN ANODES AND ANY EXISTING CONCRETE AND PROVIDE A MINIMUM OF 1.5" CONCRETE COVER.
5. IF DEPTH OF PATCH IS LESS THAN MIN REQUIRED, CONTRACTOR TO REMOVE ADDITIONAL CONCRETE AS REQUIRED TO ACCOMMODATE ANODES.



PLAN OF TYPICAL INSTALLATION TO SIDE OF REBAR



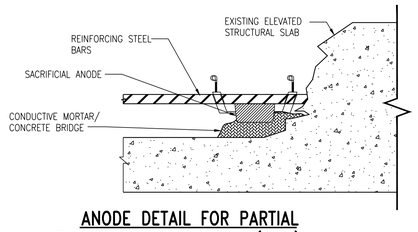
PLAN OF TYPICAL INSTALLATION AT REBAR INTERSECTION



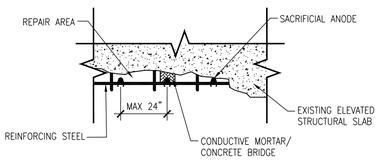
ELEVATION OF TYPICAL INSTALLATION BELOW REBAR

4 TYPICAL GALVANIC ANODE INSTALLATION DETAILS @ 24" MAX. o.c.
N.T.S.

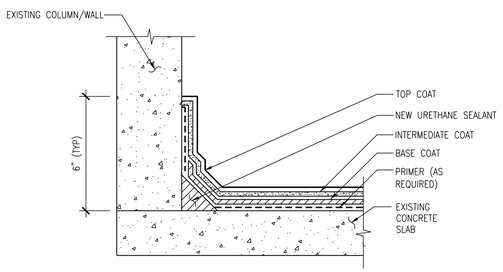
3 ANODE INSTALLATION
N.T.S.



2 ANODE DETAIL FOR PARTIAL DEPTH DELAMINATION (TYP.)
N.T.S.



1 ANODE DETAIL SOFFIT DELAMINATION (TYP.)
N.T.S.



6 DECK COATING VERTICAL TRANSITION DETAIL (TYP.)
N.T.S.

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI P.D. STEED NUMBER PE-2010001300 PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seassociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

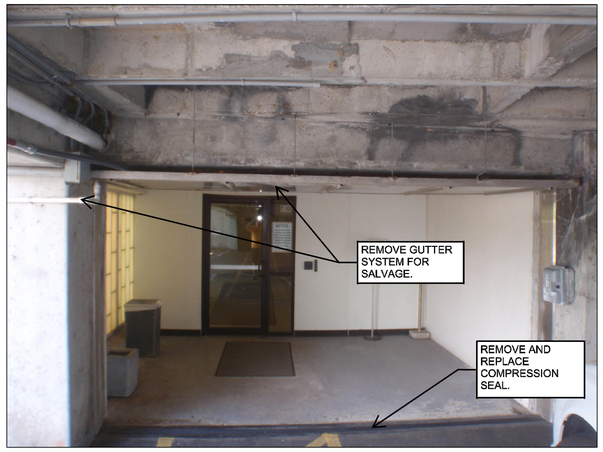
REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-DTL-02
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

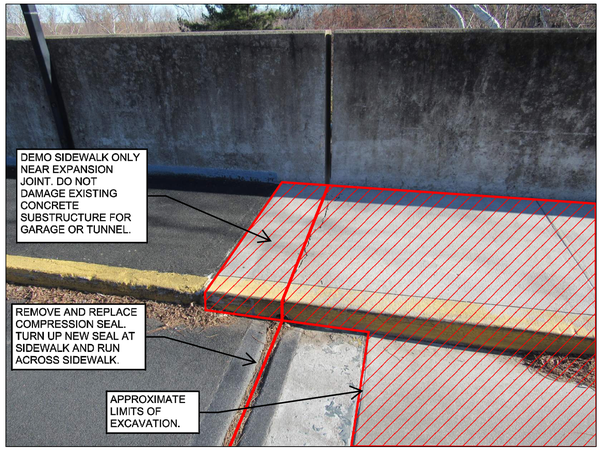
SHEET TITLE:
REPAIR DETAILS

SHEET NUMBER:
S-202
SHEET 11 OF 12
May 15, 2020

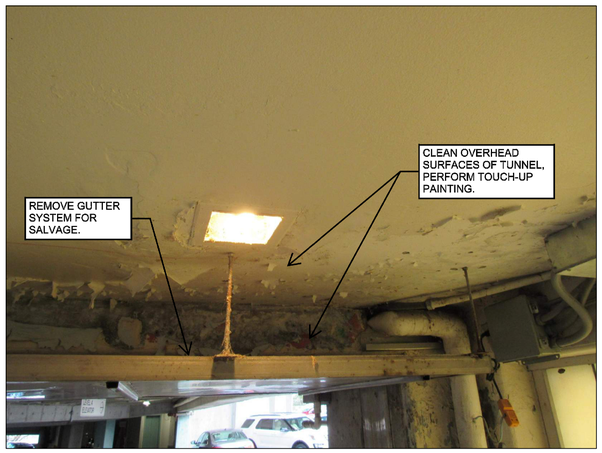
8 EXTERIOR VERTICAL JOINT



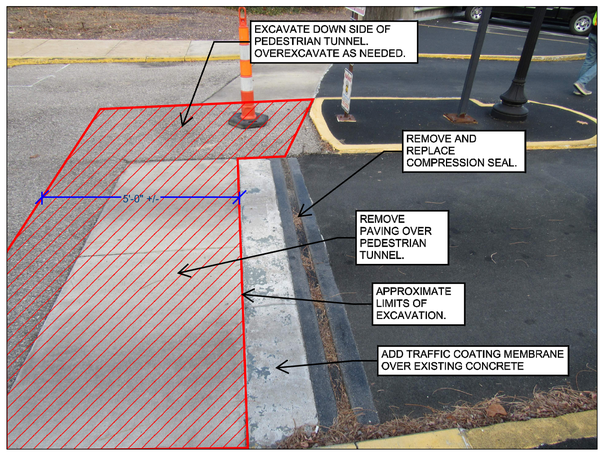
6 PEDESTRIAN TUNNEL



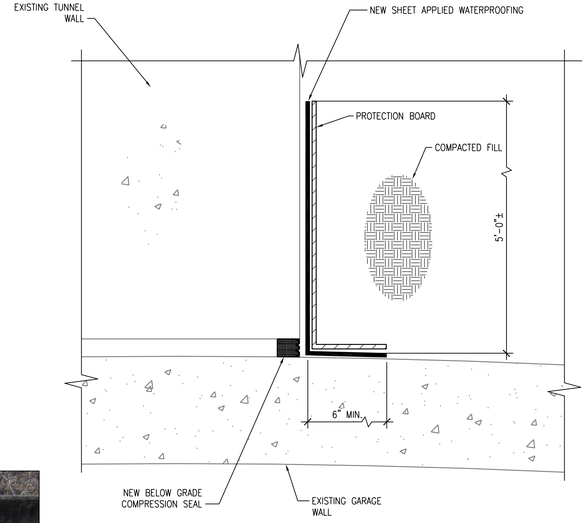
5 SIDEWALK



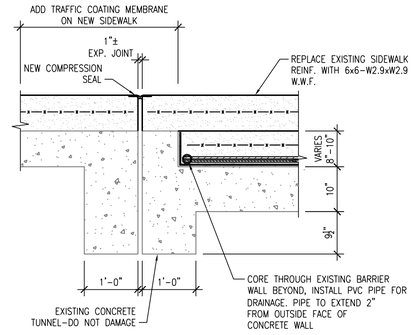
7 PEDESTRIAN TUNNEL



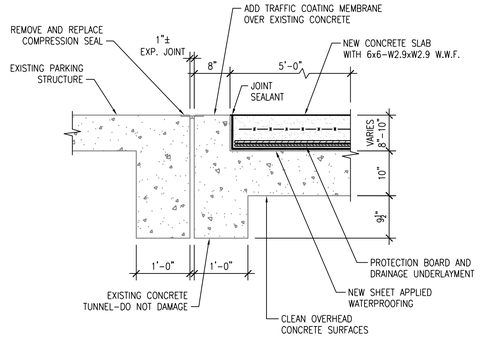
4 DRIVE LANE



3 WALL OF TUNNEL
NTS



2 SECTION AT SIDEWALK
NTS



1 SECTION AT DRIVE LANE
NTS

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
P.D. STEED
NUMBER PE-2016001300
PROFESSIONAL ENGINEER
5/15/2020

CERTIFICATE OF AUTHORITY #000396

STRUCTURAL ENGINEERING ASSOCIATES INCORPORATED
1000 Walnut, Suite 1570
Kansas City, MO 64106
p - 816-421-1042 f-816-421-1061
www.seasociates.com

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

STRUCTURAL REPAIRS

CAPITOL COMPLEX
PARKING GARAGE/CAPITOL CIRCULAR-SENATE
JEFFERSON CITY, MISSOURI

PROJECT # O1817-01
SITE # 1001
FACILITY # 3101001043

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 15 May 2020

CAD DWG FILE: S-DTL-03
DRAWN BY: LGC
CHECKED BY: PDS
DESIGNED BY: PDS

SHEET TITLE:

GARAGE ENTRANCE REPAIR DETAILS

SHEET NUMBER:

S-203

SHEET 12 OF 12
May 15, 2020